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Akira Koyama

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EXAMINER

RYMAN, DANIEL J

ART UNIT

PAPER NUMBER

2665

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12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/545,888

Applicant(s)

KOYAMA, AKIRA

Examiner

Daniel J. Ryman

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 12-14, 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 15, and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/1/2004 have been fully considered but they are not persuasive. On pages 9-10 of the Response, Applicant argues, with respect to claims 1 and 5-7, that Shima does not disclose a control unit for storing physical identifiers and telephone numbers of said gateway node and extension nodes. Examiner, respectfully, disagrees. Shima discloses that the peripheral device (gateway device) can selectively communicate with devices on the bus (col. 5, lines 16-20). It is implicit that the peripheral device would need the physical identifiers/telephone numbers of the devices, as well as for itself, in order to selectively communicate with the devices. At the very least, this reads on storing physical identifiers of the gateway node and extension nodes. Shima also discloses that the peripheral device receives calls destined for the telephone number associated of the network (col. 5, lines 1-9). At the very least, this reads on storing a telephone number of the gateway node and extension nodes since the network comprises a gateway node and extension nodes. Shima also discloses that the peripheral device can accept multiple calls simultaneously (col. 7, lines 4-46). Thus, Shima discloses that the gateway can accept multiple calls simultaneously and that the calls can be forwarded to specific devices through the use of device identifiers (i.e. direct a call to a voice mail device). Taken together, Shima implicitly discloses, or at the very least strongly suggests, storing telephone numbers of the extension nodes in order to allow an internal device to accept a call destined for a particular telephone number. As such, Examiner maintains that the rejection of claims 1 and 5-7 is correct.

Art Unit: 2665

2. On pages 10-11, Applicant, with respect to claims 8 and 9, requests a properly combinable reference as evidence of Examiner's official notice statement. As evidence, Examiner submits Glowny et al (USPN 6,249,570). Glowny discloses, in a telephone system, that multicast and unicast connections are well known as well as the differences between the two types of connections (col. 61, lines 32-38). Glowny also discloses that Caller ID is well known and that Caller ID uses a different connection than a voice connection (col. 1, lines 34-54). Thus, Examiner maintains that it is well known in the art to have a unicast connection, a multicast connection, and caller ID.

3. Applicant also argues that Ho is not properly combinable with Shima since Ho discloses a distributed system and Shima discloses a central system. Examiner, respectfully, disagrees. Ho discloses that a network can be central or distributed where a central network requires an expensive central processor (col. 1, line 62-col. 2, line 15). Thus, by performing some tasks in a distributed manner rather than in the central processor, the central processor can be less expensive. In addition, Shima discloses sending a call status of a station of which a call status is changed to all of the active nodes connected with a serial bus (col. 7, lines 37-49). Thus, the combination of Shima and Ho is possible, as is evidenced by Shima performing a similar process.

4. For the reasons given above, Examiner maintains the rejection of claims 1-11. Examiner urges Applicant to add further limitations to the claims in order to distinguish the claims from the prior art.

Election/Restrictions

5. Newly submitted claims 12-14, 16, and 17 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 12-14, 16, and 17 disclose an invention pertaining to a providing a plug and play feature which is a subcombination of the originally presented invention pertaining to a network switching system.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 12-14, 16, and 17 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 10, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al (USPN 6,456,714) in view of Akatsu et al (USPN 6,496,862).

8. Regarding claim 1, Shima discloses a network switching system wherein stream data transferred on a serial bus are exchanged through a gateway between an outside line and an extension node, or between a first extension node and a second extension node (col. 2, lines 8-38), wherein at least one said extension node comprises: a control/memory unit for storing physical identifiers and telephone numbers of said gateway node and extension nodes and for controlling said network (col. 5, lines 1-20; col. 5, lines 54-67; and col. 7, lines 4-35), where the

Art Unit: 2665

use of a telephone number as a destination address (col. 5, lines 54-67) and the ability of a peripheral device to only contact consumer devices capable of receiving voice signals (col. 5, lines 10-20) suggests that the control/memory unit stores the physical identifiers and telephone numbers of the gateway node and extension nodes and where the peripheral unit, as broadly defined, can be viewed as an extension node; an asynchronous interface, for selecting said extension node, connected with said control/memory unit (col. 5, lines 10-20); a rate conversion unit for converting a data rate of said stream data in said network into that in said outside line, or for converting a data rate of stream data in said outside line into that of said network switching system (col. 4, lines 30-42; col. 5, lines 1-20; and col. 6, line 37-col. 7, line 35); and an isochronous interface, for transmitting and receiving said stream data, connected with said rate conversion unit (col. 5, lines 36-40). Shima does not disclose that the asynchronous interface controls a switching timing; however, Shima does disclose that control signals are sent over the asynchronous interface (col. 5, lines 1-20). Akatsu teaches, in an IEEE 1394 system, that controlling a switching timing is part of the IEEE 1394 protocol (col. 2, line 40-col. 3, line 13 and col. 5, line 4-col. 6, line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to control the switching timing over the asynchronous interface since controlling switching timing is part of the IEEE 1394 protocol.

9. Regarding claim 2, referring to claim 1, Shima in view of Akatsu suggests that at least one said extension node further comprises: a microphone for inputting said stream data; a speaker for outputting said stream data; and a codec, for encoding and decoding said stream data, connected with said microphone, said speaker and said rate conversion unit for encoding and decoding said stream data (Shima: col. 5, lines 1-20 and col. 5, lines 54-67 and Akatsu: col. 3,

Art Unit: 2665

lines 1-6) where Examiner takes official notice that codecs are very well known in the art as a means for performing analog to digital conversion on signals.

10. Regarding claim 3, referring to claim 1, Shima in view of Akatsu discloses that at least one said extension node further comprises: a stream data take-in unit, for storing said stream data, connected with said rate conversion unit (col. 4, lines 30-42; col. 5, lines 1-20; and col. 6, line 37-col. 7, line 35); and a stream data processing unit, for processing said stream data, connected with said stream data take-in unit (col. 5, lines 1-27) where "processing" is a broad term which includes determining if an extension node is capable of receiving the stream.

11. Regarding claim 4, referring to claim 1, Shima in view of Akatsu disclose that the asynchronous interface and said isochronous interface are connected with a bus manager which controls said asynchronous interface, said isochronous interface, said control/memory unit, and said rate conversion unit (Shima: col. 4, lines 30-42; col. 5, lines 1-20; and col. 6, line 37-col. 7, line 35 and Akatsu: col. 2, line 40-col. 3, line 13 and col. 5, line 4-col. 6, line 31, esp. col. 6, lines 16-31).

12. Regarding claim 5, Shima discloses a gateway, comprising: a first switching unit for controlling extension nodes connected with a serial bus for isochronous transfer; and a second switching unit for exchanging stream data between an outside line and said extension nodes (col. 2, lines 8-38 and col. 3, line 10-col. 4, line 56), wherein: said second switching unit comprises a line manager (micro-controller) and a control/memory unit, said line manager exchanges said stream data between said outside line and at least one of said extension nodes according to a request from the first switching unit said first switching unit manages a call-in to said extension node and a call-out from said extension node, and said at least one extension node is uniquely

Art Unit: 2665

identified by a telephone number (col. 3, line 10-col. 4, line 56; col. 5, lines 1-27; and col. 5, lines 54-67). Shima does not expressly disclose said first switching unit comprises a bus manager connected with an asynchronous interface and an isochronous interface or that the second switching unit comprises a line manager connected with a codec. Akatsu teaches, in an IEEE 1394 system, that the IEEE 1394 protocol includes provisions for a bus manager connected with an asynchronous interface and an isochronous interface (col. 2, line 40-col. 3, line 13 and col. 5, line 4-col. 6, line 31, esp. col. 6, lines 16-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the first switching unit comprise a bus manager connected with an asynchronous interface and an isochronous interface since bus managers are part of the IEEE 1394 protocol. Akatsu also teaches that all communications on IEEE 1394 are digital (col. 3, lines 1-6). Examiner takes official notice that codecs are well known in the art as a way to perform analog to digital conversion. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the line manager be connected with a codec in order to ensure that all signals transmitted on the IEEE 1394 bus are digital.

13. Regarding claim 6, Shima discloses information terminals, comprising: a telephone for transmitting and receiving a telephone signal through a serial bus (col. 5, line 1-col. 6, line 5) and a digital monitor or other digital equipment (col. 3, line 62-col. 4, line 3). Shima does not expressly disclose a television (TV) set for receiving a TV signal through said serial bus or a bus manager for controlling said serial bus, wherein said bus manager comprises two pairs of an asynchronous interface and an isochronous interface for said telephone signal and said TV signal, respectively. Akatsu teaches, in an IEEE 1394 network, that a terminal may be a television (TV) set for receiving a TV signal through said serial bus (Figs 5 and 6 and col. 6,

Art Unit: 2665

lines 33-col. 7, line 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to have a terminal be a television (TV) set for receiving a TV signal through said serial bus in order to allow a user to watch television. Akatsu also teaches that having a bus manager is a part of the IEEE 1394 protocol (col. 2, line 40-col. 3, line 13 and col. 5, line 4-col. 6, line 31, esp. col. 6, lines 16-31). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have a bus manager for controlling said serial bus since this is part of the IEEE 1394 protocol. Shima in view of Akatsu does not expressly disclose that a single terminal houses a telephone, a television, and a bus manager; however, it is obvious to make separate elements integral, see In re Lockhart, 90 USPQ 214 (CCPA 1951) and Howard v. Detroit Stove Works, 150 U.S. 164 (1893). In this case, such a combination results in increased functionality in a single terminal. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to combine a telephone, a TV, and a bus manager in a single terminal in order to have increased functionality in a single terminal. By housing these elements in a single terminal, it would have been obvious to one of ordinary skill in the art at the time of the invention that the bus manager should comprise two pairs of an asynchronous interface and an isochronous interface for said telephone signal and said TV signal, respectively in order to allow the telephone and the television to operate simultaneously in the single terminal unit.

14. Regarding claim 7, Shima discloses a gateway comprising: a telephone gateway (col. 5, line 1-col. 6, line 5); a data gateway (col. 6, line 20-col. 7, line 49), wherein: said telephone gateway transfers a telephone signal from a public switched telephone network to a serial bus (col. 5, line 1-col. 6, line 5), and transfers a telephone signal from said serial bus to said public switched telephone network (col. 5, line 1-col. 6, line 5); said data gateway receives a data signal

Art Unit: 2665

from a data line (col. 6, line 20-col. 7, line 49), and transfers said data signal to said serial bus (col. 6, line 20-col. 7, line 49). Although not expressly disclosed, it is implicit that Shima comprises two pairs of an asynchronous interface and an isochronous interface for transferring said telephone signal and said data signal, respectively (col. 5, line 1-col. 6, line 5 and col. 6, line 20-col. 7, line 49) such that the gateway is able to communicate a data signal and a telephone signal simultaneously. Shima does not expressly disclose that said telephone gateway having a capacity to interconnect to at least one telephone terminal via said serial bus, wherein the interconnect is controlled by a telephone number identification of each of said at least one telephone terminal; however Shima suggests this. Shima discloses that when calling out, a call request includes, as a destination address, a telephone number of the destination (col. 5, lines 54-67). Shima also discloses that when a call is received, the peripheral device can direct the call only to selected devices (col. 5, lines 1-20). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the first extension node and the second extension node be uniquely identified by a telephone number in order to allow a call to be directed to a specific extension node. Examiner takes official notice that it is well known in the art to interconnect devices on a network. Shima does not expressly disclose a TV gateway; and a bus manager connected to said telephone gateway and said TV gateway, wherein: the TV gateway transfers said TV signal to said bus manager; and said bus manager comprises two pairs of an asynchronous interface and an isochronous interface for transferring said telephone signal and said TV signal, respectively. Akatsu teaches, in an IEEE 1394 network, that a terminal may be a television (TV) set for receiving a TV signal through said serial bus (Figs 5 and 6 and col. 6, lines 33-col. 7, line 10). It would have been obvious to one of ordinary skill in the art at the time

Art Unit: 2665

of the invention to have a TV gateway in order to allow television signals to be transported across the bus. Akatsu also teaches that having a bus manager is a part of the IEEE 1394 protocol (col. 2, line 40-col. 3, line 13 and col. 5, line 4-col. 6, line 31, esp. col. 6, lines 16-31). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have a bus manager for controlling said serial bus since this is part of the IEEE 1394 protocol. Thus Shima in view of Akatsu suggests that the TV gateway transfers said TV signal to said bus manager; and said bus manager comprises two pairs of an asynchronous interface and an isochronous interface for transferring said telephone signal and said TV signal, respectively.

15. Regarding claim 10, referring to claim 1, Shima in view of Akatsu suggests that each of said first extension node and said second extension node is uniquely identified by a telephone number (Shima: col. 5, lines 1-20 and col. 5, lines 54-67). Shima in view of Akatsu discloses that when calling out, a call request includes, as a destination address, a telephone number of the destination (Shima: col. 5, lines 54-67). Shima in view of Akatsu also discloses that when a call is received, the peripheral device can direct the call only to selected devices (Shima: col. 5, lines 1-20). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the first extension node and the second extension node be uniquely identified by a telephone number in order to allow a call to be directed to a specific extension node.

16. Regarding claim 11, referring to claim 1, Shima in view of Akatsu discloses that the serial bus comprises an IEEE 1394 data bus (Shima: col. 4, lines 20-29 and col. 4, lines 57-67 and Akatsu: col. 2, line 40-col. 3, line 13 and col. 5, line 4-col. 6, line 31).

17. Regarding claim 15, referring to claim 6, Shima in view of Akatsu does not expressly disclose that billing information for a digital television service is sent through said asynchronous

Art Unit: 2665

interface; however, Examiner takes official notice that it is well known in the art for a digital television service to transmit billing information. It would have been obvious to one of ordinary skill in the art at the time of the invention to send the billing information for the digital television service through the asynchronous interface in order to transmit the billing information.

18. Regarding claim 18, referring to claim 7, Shima in view of Akatsu suggests that each of said at least one telephone terminal is uniquely identified by a telephone number (Shima: col. 5, lines 1-20 and col. 7, lines 4-46).

19. Claims 8, 9, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al (USPN 6,456,714) in view of Ho (USPN 4,747,130).

20. Regarding claim 8, Shima discloses a call-in signal processing method for a network switching system using asynchronous and isochronous transfer modes (col. 5, line 4-col. 6, line 31), wherein stream data transferred on a serial bus are exchanged through a gateway between an outside line and an extension node (col. 5, line 4-col. 6, line 31), or between a first extension node and a second extension node (col. 5, line 4-col. 6, line 31), said method comprising: calling one or more extension nodes (col. 5, line 4-col. 6, line 31); securing one or more isochronous channels on the basis of responses from said extension nodes (col. 5, line 4-col. 6, line 31); allowing said extension nodes to start exchanging said stream data (col. 5, line 4-col. 6, line 31). Shima does not expressly disclose selecting, at said gateway, which of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data. Examiner takes official notice that it is well known in the art to have a unicast connection (manual call-in), a multicast connection (global call-in or conference call), and caller ID (number display). It would have been obvious to one of ordinary skill in the art at the time of the invention to select at the

Art Unit: 2665

gateway which of an automatic transfer by number display, a global call-in, or a manual call-in on the basis of setup data in order to select the correct number of terminals for which the connection is destined and in order to determine the number of connections needed to complete the call. Shima also does not disclose sending simultaneously a call status of a station of which call status is changed to all the extension nodes connected with said serial bus. Ho teaches, in a telecommunication system, using a common data communication facility connected to all modules (analogous to a bus) to broadcast resource availability to all modules (col. 3, lines 20-25 and col. 3, lines 63) in order to allow resource searching to occur within each module individually (col. 3, lines 58-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to send simultaneously call status of a station of which call status is changed to all extension nodes connected with the serial bus in order to allow each node to be able to determine the availability of bandwidth individually.

21. Regarding claim 9, Shima discloses a call-out signal processing method for a network switching system using asynchronous and isochronous transfer modes (col. 5, line 4-col. 6, line 31), wherein stream data transferred on a serial bus is exchanged through a gateway between an outside line and an extension node (col. 5, line 4-col. 6, line 31), or between a first extension node and a second extension node (col. 5, line 4-col. 6, line 31), said method comprising: receiving at said gateway a call-out from an extension node (col. 5, line 4-col. 6, line 31); confirming, at said gateway, a call status of call object (col. 5, line 4-col. 6, line 31); securing an isochronous channel for transmission (col. 5, line 4-col. 6, line 31); securing an isochronous channel for reception (col. 5, line 4-col. 6, line 31); allowing said call object to start exchanging said stream data, when said call object has responded, while sending, to said extension node

Art Unit: 2665

which carried out said call-out, a call status that indicates that said call object does not respond, when said call object has not responded (col. 5, line 4-col. 6, line 31); releasing said isochronous channels for transmission and reception, when detecting an on-hook of said extension node which has made said call-out (col. 5, line 4-col. 6, line 31). Shima does not disclose sending said call status to all the extension nodes connected to said gateway. Ho teaches, in a telecommunication system, using a common data communication facility connected to all modules (analogous to a bus) to broadcast resource availability to all modules (col. 3, lines 20-25 and col. 3, lines 63) in order to allow resource searching to occur within each module individually (col. 3, lines 58-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to send call status of a station of which call status is changed to all extension nodes connected with the gateway in order to allow each node to be able to determine the availability of bandwidth individually.

22. Regarding claims 19 and 20, referring to claims 8 and 9, Shima in view of Ho suggests that each of said first extension node and said second extension node is uniquely identified by a telephone number (Shima: col. 5, lines 1-20 and col. 7, lines 4-46).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Humpleman (USPN 5,940,387) see entire document which relates to a bus system which allows for telephone communications. Edens et al (USPN 6,611,537) see entire document which relates to a bus system which allows for synchronous and asynchronous communication including telephone service.

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2665

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

^{DJR}
Daniel J. Ryman


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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600